

ABSTRACT OF THE DISCLOSURE

A demodulator includes a wobble signal processor configured to convert a waveform of a wobble signal, and to generate a clock and a reference value based on a converted wobble signal. A sampling circuit is configured to sample the converted wobble signal
5 by using the clock, and to generate a sampled signal. A viterbi decoder is configured to decode an auxiliary recording signal superposed on an optical disk by using the reference value and the sampled signal.